

REMARKS

Claims 1-2 and 6-14 are pending in the application. Claims 3-5 have been cancelled. Claims 1 and 12 have been amended. New claim 14 has been added. Claims 1, 12, and 14 are in independent form.

Claims 1-2 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication 2003/0209655 to Wang ("the '655 reference"). Applicants respectfully traverse the rejection.

The '655 reference discloses a single core sensor 401 having an elongated optical fiber 410. The sensor 401 includes a pair of plates 471, 472 with one of the plates 471 having ridges 471a that are offset with respect to a plurality of ridges 472a of the second plate 472. When opposing forces are applied to the plates 471, 472, the opposing ridges 471a, 472a create a series of micro-bends in the optical fiber 410.

Claim 1 of the above-captioned application, as amended, claims a multi-layer sensor through which an optical wave guide (18, 42, 60) is passed, the optical wave guide (18, 42, 60) defining a structure (52, 82, 104) in which the optical wave guide (18, 42, 60) is contained, the structure (52, 82, 104) having a front layer (54, 84, 106) and a rear layer (56, 86) which transmits an external application of force directly onto the optical wave guide (18, 42, 60), the structure further including domes (34, 102) each defining slots for retaining the optical wave guide (18, 42, 60) in a curved path and ribs (38, 62, 88) for deforming the optical wave guide (18, 42, 60) in a single plane.

The '655 reference does not disclose domes (34, 102) each defining slots for retaining an optical wave guide (18, 42, 60), as required by claim 1 of the above-captioned application. In the '655 reference, the Examiner characterizes a ridge 471a in a plate 471 from the '655 reference as a disclosure of the domes (34, 102) in the above-captioned application. This ridge 471a in the plate 471 in the '655 reference does not, however, include a slot extending therethrough. Moreover, such a slot in the ridge 471a is not contemplated by the '655 reference. As stated in the specification of the '655 reference, "[w]hen opposing forces are applied to the plates 471, 472, the opposing ridges 471a, 472b form a series of micro-bends in the optical fiber

410.” (Paragraph [0037], lines 5-8.) It is the opposing forces of the plates 471, 472 that retain the optical fiber 410. Clearly, a slot formed in a dome to retain the optical wave guide, as required by claim 1 of the above-captioned application, would not have been obvious to one skilled in the art in view of the '655 reference.

Claim 2 depends from claim 1 and, as such, is construed to incorporate by reference all the limitations of the claim to which they refer, *see* 35 U.S.C. §112, fourth paragraph. Thus, claim 2 must be read as including the limitation of domes (34, 102) each defining slots for retaining an optical wave guide (18, 42, 60).

Therefore, Applicants respectfully request that the rejection of claims 1-2 under 35 U.S.C. §103(a) as being unpatentable over the '655 reference be withdrawn.

Claims 6-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the '655 reference, as applied to claim 1 above, in view of U.S. Patent 5,913,245 to Grossman (“the '245 reference”). Applicants respectfully traverse the rejection.

Claims 6-11 depend from claim 1 and, as such, are construed to incorporate by reference all the limitations of the claim to which they refer, *see* 35 U.S.C. §112, fourth paragraph. Thus, claims 6-11 must be read as including the limitation of domes (34, 102) each defining slots for retaining an optical wave guide (18, 42, 60). Neither the '655 reference nor the '245 reference disclose domes each defining slots for retaining an optical wave guide. In addition, Applicants submit that these references do not provide any teaching, suggestion, or motivation for domes each defining slots for retaining an optical wave guide.

Therefore, Applicants respectfully request that the rejection of claims 6-11 under 35 U.S.C. §103(a) as being unpatentable over the '655 reference, as applied to claim 1 above, in view of the '245 reference be withdrawn.

Claims 12 and 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,429,421 to Meller et al. (“the '421 reference”). Applicants respectfully traverse the rejection.

Claim 12 of the above-captioned application, as amended, claims a multi-layer sensor comprising a first layer extending in a longitudinal direction and including a plurality of domes mounted therealong, each of said plurality of domes including a slot extending therethrough, said plurality of domes spaced apart from one another longitudinally and offset from one another in a lateral direction; an optical wave guide retained solely by said plurality of domes, said optical wave guide extending through said slots in said plurality of domes; and a second layer facing said first layer and selectively transmitting an external application of force to said optical wave guide, said second layer including ribs for deforming said optical wave guide towards said first layer in response to an impact in order to change the amount of light carried per unit of time through said optical wave guide.

The '421 reference discloses an upper element bending grid 20 having at least one interlocking member 60, and a lower element bending grid 30 having at least one interlocking member 70. When engaged, each upper interlocking member 60 mates with each respective lower flexible element 50 of the lower bending element grid 30 such that the lower flexible element 50 nests within the upper interlocking member 60. An optical fiber 80 is positioned between each flexible element 40 of the upper bending element grid 20 and each flexible element 50 of the lower element bending grid 30 (see Figure 4B).

The '421 reference clearly does not disclose a plurality of domes each including a slot extending therethrough, and an optical wave guide extending through the slots in the plurality of domes. In addition, Applicants respectfully submit that there is no teaching, suggestion, or motivation in the '421 reference for a plurality of domes each including a slot extending therethrough, and an optical wave guide extending through the slots in the plurality of domes.

Claim 13 depends from claim 12 and, as such, is construed to incorporate by reference all the limitations of the claim to which they refer, *see* 35 U.S.C. §112, fourth paragraph. Thus, claim 13 must be read as including the limitation of a plurality of domes each including a slot extending therethrough, and an optical wave guide extending through the slots in the plurality of domes.

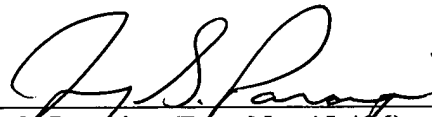
Therefore, Applicants respectfully request that the rejection of claims 12-13 under 35 U.S.C. 103(a) as being unpatentable over the '421 reference be withdrawn.

New claim 14 has been added. Claim 14 claims a multi-layer sensor comprising a first layer through which an optical wave guide is guided, said optical wave guide being arranged in such a way that in the case of exposure to an action of an external force said external force acts on the optical wave guide; a second layer which lies against said first layer; and a third layer which is arranged in such a way that said first layer is arranged between said second and third layers; said third layer including domes formed thereon, each of said domes having a slot through which said optical wave guide is guided. Applicants respectfully submit that new claim 14 is not anticipated by or obvious in view of the cited references.

It is respectfully submitted that this patent application is in condition for allowance, which allowance is respectfully solicited. If the Examiner has any questions regarding this amendment or the patent application, the Examiner is invited to contact the undersigned.

The Commissioner is hereby authorized to charge any additional fee associated with this Communication to Deposit Account No. 50-1759. A duplicate of this form is attached.

Respectfully submitted,



Jay S. Paranjpe (Reg. No. 45,486)
Clark Hill PLC
500 Woodward Avenue, Suite 3500
Detroit, MI 48226-3435
(313) 965-8300

Date: 1/24/08
Attorney Docket No: 22204-119468